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Reply to Office Action of Dec. 27, 2005

REMARKS

Claims 1, 2, 5, 8-11, 13-14 and 16 remain pending in the application.

Claim Rejections under 35 U.S.C. 103

Claims 1, 5, 8, 9, 13 and 16 are understood to be rejected under 35 U.S.C. 103(a) as being anticipated by Park (U.S. Patent No. 5,949,511) in view of Yano et al. (U.S. Patent No. 6,108,068 "Yano").

In response to this rejection, applicant submits that claim 1 is allowable over Park and Yano, as follows:

Claim 1 recites in part:

An IPS (in plane switching) liquid crystal display, comprising ...the spacers are made of an ACF (anisotropic conductive film).

Applicant submits that none of Park, Yano, and a combination of Park and Yano discloses, teaches or otherwise suggests the invention as recited in claim 1.

Park does disclose an IPS liquid crystal display comprising: a first substrate; a second substrate opposite to the first substrate; a liquid crystal layer disposed between the two substrates; a plurality of common electrodes

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and pixel electrodes disposed on the second substrate; and a plurality of spacers disposed on the common electrodes and the pixel electrodes, wherein the spacers are electrically conductive. Yano teaches a spacer construction for forming a spacer capable of bonding the first and second substrates in an electro-conductive state while having an electrically conductive thin film. However, the combination of Park and Yano does not disclose or suggest the limitation whereby "the spacers are made of an ACF (anisotropic conductive film)" as recited in claim 1. That is the combination of Park and Yano does not disclose or suggest an IPS liquid crystal display comprising a plurality of spacers made of an ACF (anisotropic conductive film). Accordingly, the combination fails to teach or suggest the IPS liquid crystal display as recited in claim 1.

Furthermore, the IPS liquid crystal display as recited in claim 1 produces new and unexpected results. ACF is an adhesive film consisting of dispersed, microscopic, electrically conductive particles and an insulating adhesive film, which provides electrical conductivity with the common and pixel electrodes (vertical direction), and insulation between the adjacent common and pixel electrodes (horizontal direction). Therefore, a strong electrical field having highly uniform direction is generated by the electrodes and the spacers connected with them. Moreover, the IPS liquid crystal display can prevent short circuits occurring between the adjacent common and pixel electrodes.

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In summary, there is nothing in Park and Yano that teaches or suggests to one of ordinary skill in the art that they might or should provide the IPS liquid crystal display of claim 1.

Accordingly, claim 1 is submitted to be unobvious and patentable over Park and Yano under s.103(a). Reconsideration and withdrawal of the rejection and allowance of claim 1 are respectfully requested.

Claims 5 and 8 depend directly from claim 1, and therefore should also be allowable.

Claim 9 recites in part:

An IPS (in plane switching) liquid crystal display, comprising ...each of the spacers comprises a spacer body and an electrically conductive film around the spacer body, and the conductive film is made of an ACF (anisotropic conductive film).

Applicant submits that none of Park, Yano, and a combination of Park and Yano discloses, teaches or otherwise suggests the invention as recited in claim 9.

Park does disclose an IPS liquid crystal display comprising: a first substrate; a second substrate opposite to the first substrate; a liquid crystal layer disposed between the two substrates; a plurality of common electrodes and pixel electrodes disposed on the second substrate; and a plurality of

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spacers disposed on the common electrodes and the pixel electrodes, wherein the spacers are electrically conductive. Yano does teach a spacer construction capable of bonding the first and second substrates in an electro-conductive state while having a kernel portion with high hardness for determining the thickness of the liquid crystal. That is, Yano teaches a spacer having a central spacer body and an electrically conductive film.

However, neither Park nor Yano teaches or suggests to one of ordinary skill in the art that they might or should provide an IPS liquid crystal display of claim 9 comprising a spacer body and an electrically conductive film around the spacer body, wherein the conductive film is made of an ACF (anisotropic conductive film). Accordingly, claim 9 is submitted to be unobvious and patentable over Park in view of Yano under 35 U.S.C. 103(a). ACF is an adhesive film consisting of dispersed, microscopic, electrically conductive particles and an insulating adhesive film, which provides electrical conductivity with the common and pixel electrodes (vertical direction), and insulation between the adjacent common and pixel electrodes (horizontal direction). Therefore, a strong electrical field having highly uniform direction is generated by the electrodes and the spacers connected with them. In addition, the IPS liquid crystal display can prevent short circuits occurring between the adjacent common and pixel electrodes.

Accordingly, reconsideration and withdrawal of the rejection of claim 9

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are respectfully requested.

Claims 13 and 16 depend directly from claim 9, and therefore should also be allowable.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Yano and in further view of Shimoshikiryo et al. (U.S. Patent No. 6,130,739).

Applicant refers to and relies upon the above remarks regarding claim 1 and Park in view of Yano. Further, there is nothing in Shimoshikiryo that teaches or suggests to one of ordinary skill in the art that he or she might or should provide the IPS-LCD comprising a plurality of spacers made of an ACF (anisotropic conductive film), as recited in claim 1. Accordingly, claim 1 is submitted to be unobvious and patentable over Park in view of Yano and in further view of Shimoshikiryo under 35 U.S.C. 103(a).

Claim 2 depends from claim 1. Therefore, claim 2 should be patentable over the cited references. Reconsideration and withdrawal of the rejection of claim 2 are respectfully requested.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over

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Park in view of Yano and in further view of Shimoshikiryo.

Applicant refers to and relies upon the above remarks regarding claim 9 and Park in view of Yano. Further, there is nothing in Shimoshikiryo that teaches or suggests to one of ordinary skill in the art that he or she might or should provide the IPS liquid crystal display comprising a plurality of spacers, wherein each of the spacers comprises a spacer body and an electrically conductive film around the spacer body, and the conductive film being is of an ACF (anisotropic conductive film), as recited in claim 9. Accordingly, claim 9 is submitted to be unobvious and patentable over Park in view of Yano and in further view of Shimoshikiryo under 35 U.S.C. 103(a).

Claim 10 depends from claim 9. Therefore, claim 10 should be patentable over the cited references. Reconsideration and withdrawal of the rejection of claim 10 are respectfully requested.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Yano and Shimoshikiryo and in further view of Shimizu et al.

Applicant refers to and relies upon the above remarks regarding claim 9

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and Park in view of Yano and Shimishikiryō. Further, there is nothing in Shimizu that teaches or suggests to one of ordinary skill in the art that he or she might or should provide the IPS liquid crystal display comprising a plurality of spacers, wherein each of the spacers comprises a spacer body and an electrically conductive film around the spacer body, and the conductive film being is of an ACF (anisotropic conductive film), as recited in claim 9. Accordingly, claim 9 is submitted to be unobvious and patentable over Park in view of Yano and Shimoshikiryō and in further view of Shimizu et al under 35 U.S.C. 103(a).

Claim 11 depends indirectly from claim 9. Therefore, claim 11 should be patentable over the cited references. Moreover, the very fact that as many as four references are cited to support the combination rejection is, in addition to the above assertions, further probative of unobviousness. Reconsideration and withdrawal of the rejection of claim 11 are respectfully requested.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Yano and in further view of Shimizu et al (U.S. Patent No. 4,390,245).

Applicant refers to and relies upon the above remarks regarding claim 9

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and Park in view of Yano. Further, there is nothing in Shimizu that teaches or suggests to one of ordinary skill in the art that he or she might or should provide the IPS liquid crystal display comprising a plurality of spacers, wherein each of the spacers comprises a spacer body and an electrically conductive film around the spacer body, and the conductive film is made of an ACF (anisotropic conductive film), as recited in claim 9. Accordingly, claim 9 is submitted to be unobvious and patentable over Park in view of Yano and in further view of Shimizu under 35 U.S.C. 103(a).

Claim 14 depends indirectly from claim 9. Therefore, claim 14 should be patentable over the cited references. Reconsideration and withdrawal of the rejection of claim 14 are respectfully requested.

In view of the foregoing, the present application as claimed in the pending claims is considered to be in a condition for allowance, and an action to such effect is earnestly solicited. If there are any deficiencies, the Examiner is invited to call the undersigned to put the instant application in condition for allowance.

Respectfully submitted,

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